Jungheinrich customer reference

Intelligent traffic control at Hama.

JUNGHEINRICH

Jungheinrich accelerates the pace of logistics with mobile robots at Hama.

Automation projects in large logistics centres are always challenging. However, it is essentially the same as building a house – creating a new structure is often easier than renovating an existing one. At Hama in Monheim, logistics processing is set to become faster and more efficient thanks to the use of Automated Guided Vehicle Systems, or mobile robots. However, to achieve this, it will first be necessary to co-ordinate the various technologies from different manufacturers within the existing facilities. This is time-consuming, painstaking work that requires a great deal of expertise and suitable interfaces. One such interface is the specially developed Jungheinrich Logistics Interface, which enables cross-technology information exchange. In addition to that, there is a risk of gridlock for the mobile robots due to bottlenecks and junctions in the Hama logistics system. Jungheinrich is therefore developing a new type of area control system especially for Hama, which ensures continuous, automated material flows.

Anyone who uses a smartphone, switches on a TV, or operates a camera or video camera has probably used a Hama device. Hama GmbH & Co KG is one of Europe's leading suppliers of accessories for mobile phones, smart homes, smart watches, audio, TV, computers and photo/video. A 100,000 m^2 warehouse with an order picking and dispatch centre is located at the company's headquarters in Monheim, Bavaria. At peak times, up to 650,000 items per day are dispatched to customers on lorries, either as individual shipments in tiny parcels or packed together on Euro pallets. In 2021, Hama's Logistics Managers decided to automate the transport processing of the entire logistics centre due to the shortage of skilled workers and increasing costs, deadlines and competitive pressure.

CREATING STABLE CONNECTIONS.

"With such a demanding project, you need a reliable partner", explains Logistics Manager Ossiander. Automation experts at Jungheinrich were offering exactly what he was looking for. A site analysis revealed that 18 mobile robots, Automated Guided Vehicle Systems (AGVS), could service the 420 floor spaces and 222 rack spaces as well as 1,680 floor block spaces fully automatically. "Together with the Hama project team, we opted for the ERC 213a platform truck. To control the trucks, data is exchanged via the Jungheinrich Logistics Interface," explains Jungheinrich project manager Günther Zimdars.

First, however, all existing technologies had to be prepared for automated transport with the mobile robots by means of interfaces. This was a complex undertaking, involving around 2.6 km of major traffic routes, 104 transport routes, including 15 drop-off and pick-up points on the materials handling equipment, 17 buffer stacking areas, an automatic palletising station, three pallet stretchers, five rapid action doors, 17 fire doors, and two lifting and tipping devices for automated waste disposal. Numerous meetings were held with five different suppliers until everything was set up.

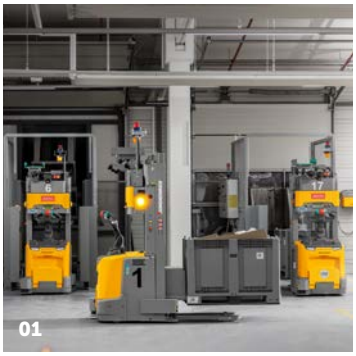
CLEAR RULES FOR EFFICIENCY AND SAFETY.

During the project, it turned out that it was not possible to operate the mobile robots in the usual way due to the layout of the hall. Normally, the AGVS signals that it is free via the AGV/AMR Connector of the Jungheinrich Logistics Interface. The next order in the vicinity is then assigned to the mobile robot. "However, our warehouse encounters bottlenecks and junctions," explains Ossiander, "if we simply let all the mobile robots drive freely, there would be blockages, which would bring the entire system to a standstill."

The Jungheinrich specialists solved this dilemma with an area control system specially developed for Hama. The first step for the planning team was to define areas within the AGVS travel paths. This data is transmitted to the mobile robots together with a stored schedule using the AGV/AMR Connector. "In this way, we can limit the number of mobile robots in certain areas. Only trucks with special sensors are permitted to enter", explains Günther Zimdars. "It is of course possible to prioritise transport orders", adds Ossiander, "if pallets urgently need to be removed from materials handling equipment, a mobile robot that may be a little further away can take on this task to avoid passing through any of our identified bottlenecks. This has made our processes more efficient and safe".

01
A proportion of the daily transport operations carried out by mobile robots at Hama disposes of waste via the lifting and tipping stations.

02
The mobile robots service the 420 floor spaces, 222 rack spaces and 1,680 floor block spaces fully automatically.



> **The area control system developed especially for us has significantly increased our process reliability.**

Anton Ossiander
Logistics Manager at Hama GmbH & Co KG

We talk to Anton Ossiander, Logistics Manager at Hama GmbH & Co KG.

Jungheinrich has helped automate your internal transport system. Why was this necessary?

Like most companies, we are also struggling with a shortage of skilled labour. Even as a major employer in the region, our human resources are limited. Added to this are the pressures of cost and competition. As one of the world's leading distributors in the consumer electronics sector, we have to process up to 70,000 order lines per day at peak times in order to supply our customers with single items or several truckloads of items in a timely manner. This requires an efficient logistics system, and the only way to achieve this is with automation.

How was it possible to implement an efficient network of Automated Guided Vehicle Systems (AGVS) despite the less than ideal spatial conditions?

Jungheinrich's automation specialists have worked with expertise, patience and vigour to make every technology in our logistics operations compatible with the 18 ERC 213a mobile robots, using suitable, specially developed interfaces. It was a slow and labour-intensive task. It then became clear that the mobile robots would block each other at bottlenecks and junctions if we just let them drive freely. The Jungheinrich experts therefore came up with a unique solution to this problem – the area control system. The first step was to define areas within the AGVS travel paths. Only a certain number of mobile robots are now permitted in some areas. We can prioritise transport orders according to importance, and the AGVS can be given priority through these areas, or a mobile robot that may be a little further away can take on this task to avoid passing through one of our bottlenecks. Both methods guarantee an even distribution of mobile robots, preventing blockages and traffic jams.

How have you already benefitted from automation?

We have become much more efficient. We handle over 2,800 transport orders per day with the 18 mobile robots from Jungheinrich. In addition, process reliability has increased significantly thanks to solutions such as area control. Automation also allows us to use our staff for more value-added tasks.

How satisfied are you with your partnership with Jungheinrich?

This was no easy task, yet Jungheinrich has proven to be a reliable partner. For every problem that arose, Jungheinrich experts either provided a solution or developed a new one for us. The support following commissioning has also been excellent. Anyone who manages a fully automated logistics warehouse knows the importance of reliability. I know I can count on that with Jungheinrich.

THE PROJECT AT A GLANCE

Customer:	Hama GmbH & Co KG
Sector:	Electronics
Company size:	2,500 employees worldwide
Location:	Monheim, Bavaria
Warehouse size:	Approx. 100,000 m²

CHALLENGE

Hama GmbH & Co KG is one of Europe's leading suppliers of accessories for mobile phones, smart homes, smart watches, audio, TV, computers and photo/video. To create more efficient, faster and less labour-intensive material flows, it was necessary to automate the internal material flow in the logistics area. This involved co-ordinating numerous technologies from different manufacturers within the existing structures.

JUNGHEINRICH SOLUTION

By incorporating a large number of specially developed interfaces, such as the Jungheinrich Logistics Interface, Jungheinrich was able to prepare all of the key logistics areas, the materials handling equipment and the buffer stations for use with 18 ERC 213a mobile robots. An area control system specially developed for Hama and a logistics interface to transmit the data evenly distributes the number of mobile robots entering narrow areas and prevents blockages and traffic jams at junctions on the travel paths.

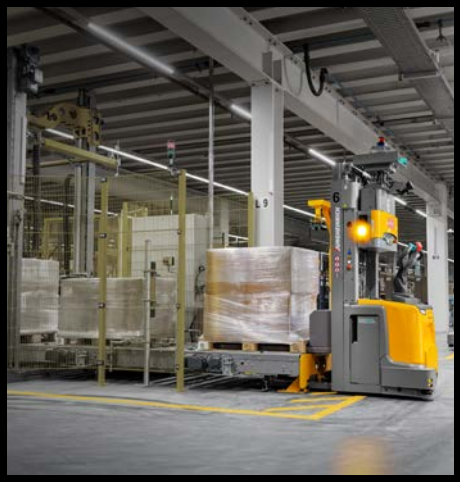
RESULTS

Hama handles over 2,800 transport orders per day with 18 ERC 213a mobile robots from Jungheinrich. The specially developed area control system guarantees a high level of process reliability, while automated processes free up employees for more value-added tasks.

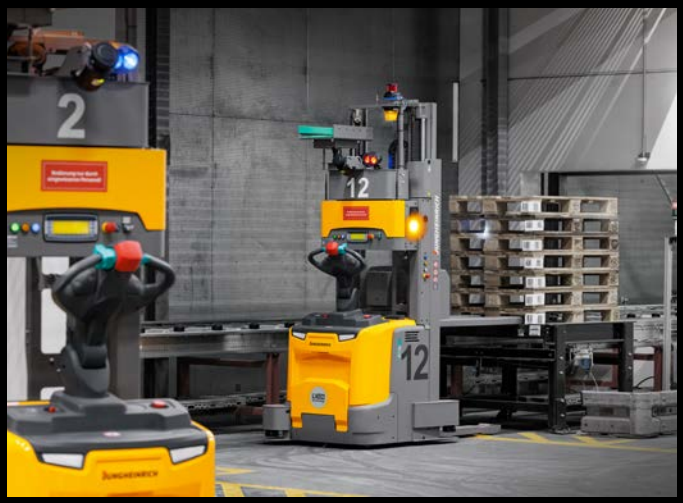
IMPRESSIONS

The compact ERC 213a mobile robots are perfect for handling goods in confined spaces. The electric lift motor can also reach high lift heights. To avoid traffic jams and blockages in heavily frequented areas, the area control system developed especially for Hama maintains smooth traffic flows.

All the information comes together in the Hama logistics control centre. From here, it is possible to view and monitor all the mobile robots' transport orders, among other operational details.



Pallets are wrapped in stretch film to ensure the safe transport of goods. The Jungheinrich Logistics Interface uses a specially designed interface solution, the AGV/AMR Connector, to enable a continuous, automated material flow between the pallet stretchers and the mobile robots.



The mobile robots control pick-up and drop-off points. In addition to finding suitable interfaces, the narrow travel paths in the existing structures were a challenge for automation.

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